

Notice of Allowability

Application No.

10/668,085

Examiner

Rosanne Kosson

Applicant(s)

BOWLIN ET AL.

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an amendment filed on July 19, 2007.
2. ☒ The allowed claim(s) is/are 1, 6, 9, 25, 27-32 and 36-44.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 3/26/06 - added dates to p.4
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

1. The application has been amended as follows.

The title is amended as follows.

~~Electroprocessing in drug delivery and cell encapsulation~~ Electroprocessed material made by simultaneously electroprocessing a natural protein polymer and two synthetic polymers

The specification is amended as follows.

The paragraph on p. 1, lines 7-12, is replaced with the following paragraph as follows.

~~This application claims priority to U.S. provisional patent application serial number 60/241,008 filed October 18, 2000, U.S. provisional patent application serial number 60/270,118 filed February 22, 2001, U.S. non-provisional patent application serial number 09/714,255 filed November 17, 2000, and U.S. non-provisional patent application serial number 09/946,158 filed September 4, 2001.~~

This application is a continuation of Application No. 09/982,515, filed 10/18/2001, now abandoned, which is a continuation-in-part of Application No. 09/946,158, filed 09/04/2001, now abandoned, which is a continuation-in-part of Application No. 09/654,517, filed 09/01/2000, now abandoned. Application No. 09/982,515 is a continuation-in-part of Application No. 09/714,255, filed 11/17/2000, now abandoned, which is a continuation-in-part of Application No. 09/512,081, filed 02/24/2000, now abandoned, which is a continuation-in-part of Application No. 09/386,273, filed 08/31/1999, now U.S. Patent No. 6,592,623. Application No. 09/982,515 is also a continuation-in-part of Application No. 09/512,081. Application No. 09/982,515 is also a continuation-in-part of Application No. 09/386,273, now U.S. Patent No. 6,592,623, which claims priority to Provisional Application No. 60/241,008, filed 10/18/2000 and Provisional Application No. 60/270,118, filed 02/22/2001.

The claims are amended as follows.

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1. (currently amended) A composition comprising:

an electroprocessed material and a substance, wherein the electroprocessed material is made by a method comprising the step of ~~comprises~~ simultaneously electroprocessing a natural polymer that is an extracellular matrix protein or polymerized thrombin and two or more synthetic polymers, wherein the synthetic polymers are selected from the group consisting of poly(urethanes), poly(siloxanes), silicones, poly(ethylene), poly(vinyl pyrrolidone), poly(2-hydroxyethyl methacrylate), poly(N-vinyl pyrrolidone), poly(methyl methacrylate), poly(vinyl alcohol), poly(acrylic acid), polyacrylamide, poly(ethylene-co-vinyl acetate), poly(ethylene glycol), poly(methacrylic acid), polylactides (PLA), polyglycolides (PGA), poly(lactide-co-glycolides) (PLGA), polyanhydrides and polyorthoesters, one or more natural materials and two or more synthetic materials; and, wherein the one or more natural materials is selected from the group consisting of amino acids, peptides, denatured peptides, polypeptides, proteins, carbohydrates, lipids, nucleic acids, glycoproteins, lipoproteins, glycolipids, glycosaminoglycans, proteoglycans, and a combination thereof; and, wherein the two or more synthetic materials ~~comprises two or more polymers; and, wherein the substance comprises a therapeutic substance, a cosmetic substance or a combination thereof.~~

24. (canceled)

25. (currently amended) A composition comprising an electroprocessed

material, wherein the electroprocessed material is made by a process comprising the step of ~~comprises~~ simultaneously electroprocessing a solution comprising a natural polymer that is an extracellular matrix protein or polymerized thrombin and two or more synthetic polymers, wherein the synthetic polymers are selected from the group consisting of poly(urethanes), poly(siloxanes), silicones, poly(ethylene), poly(vinyl pyrrolidone), poly(2-hydroxy ethyl methacrylate), poly(N-vinyl pyrrolidone), poly(methyl methacrylate), poly(vinyl alcohol),

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poly(acrylic acid), polyacrylamide, poly(ethylene-co-vinyl acetate), poly(ethylene glycol), poly(methacrylic acid), polylactides (PLA), polyglycolides (PGA), poly(lactide-co-glycolides) (PLGA), polyanhydrides and polyorthoesters ~~one or more natural materials and two or more synthetic materials; wherein the one or more natural materials is selected from the group consisting of amino acids, peptides, denatured peptides, polypeptides, proteins, carbohydrates, lipids, nucleic acids, glycoproteins, lipoproteins, glycolipids, glycosaminoglycans, proteoglycans, and a combination thereof; and wherein the two or more synthetic materials comprises two or more polymers.~~

26. (canceled)

27. (currently amended) The composition of claim 25 ~~[[26]]~~, wherein the protein extracellular matrix protein is selected from the group consisting of ~~extracellular matrix proteins~~, collagen, fibrin, fibrinogen, ~~thrombin~~, elastin, laminin and fibronectin.

36. (currently amended) A composition comprising:

an electroprocessed material, wherein the electroprocessed material is made by a process comprising the step of simultaneously electroprocessing from a solution a natural polymer that is an extracellular matrix protein or polymerized thrombin and two or more synthetic polymers, wherein the synthetic polymers are selected from the group consisting of poly(urethanes), poly(siloxanes), silicones, poly(ethylene), poly(vinyl pyrrolidone), poly(2-hydroxy ethyl methacrylate), poly(N-vinyl pyrrolidone), poly(methyl methacrylate), poly(vinyl alcohol), poly(acrylic acid), polyacrylamide, poly(ethylene-co-vinyl acetate), poly(ethylene glycol), poly(methacrylic acid), polylactides (PLA), polyglycolides (PGA), poly(lactide-co-glycolides) (PLGA), polyanhydrides and polyorthoesters, and wherein the electroprocessing is selected from the group consisting of electrospraying, electrosputtering, electrospinning or electroaerosol

~~treatment of the solution comprises one or more natural materials and two or more synthetic materials simultaneously electroprocessed from a solution; wherein the electroprocessed material is prepared by electrospraying, electrosputtering, electrospinning or electroaerosol treatment of a the solution comprising the one or more natural materials and the two or more synthetic materials; and, wherein the one or more natural materials is selected from the group consisting of amino acids, peptides, denatured peptides, polypeptides, proteins, carbohydrates, lipids, nucleic acids, glycoproteins, lipoproteins, glycolipids, glycosaminoglycans, proteoglycans, and a combination thereof; and, wherein the synthetic material comprises two or more polymers.~~

40. (currently amended) The composition of claim 1, wherein the extracellular matrix protein ~~one or more natural materials~~ comprises collagen.

41. (currently amended) The composition of claim 25, wherein the extracellular matrix protein ~~one or more natural materials~~ comprises collagen.

42. (currently amended) The composition of claim 36, wherein the extracellular matrix protein ~~one or more natural materials~~ comprises collagen.

43. (new) The composition of claim 1, wherein the extracellular matrix protein is selected from the group consisting of collagen, fibrin, fibrinogen, ~~thrombin~~, elastin, laminin and fibronectin.

44. (new) The composition of claim 1, further comprising one or more molecules, cells, objects or combinations thereof.

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Authorization for this Examiner's Amendment was given by telephone by Applicants' agent, Ms. Zara Doddridge, on August 31, 2007.

2. The following is an examiners statement of reasons for allowance. As discussed in the previous Office actions, the prior art discloses making materials of a combination of natural and synthetic electroprocessed (electrospun) polymers. See, e.g., the anticipation rejections in the Office action of July 6, 2006, the disclosures of Coffee (US 6,252,129), Martin et al. (US 4,043,331), Doshi et al. ("Electrospinning process and applications of electrospun fibers," J Electrostatics 35:151-160, 1995) and Murphy et al. (US 2002/0172705). But, the prior art does not disclose a composition that is made by a process of electroprocessing at least three polymers simultaneously in which one polymer is an extracellular matrix protein and the other two polymers are synthetic polymers.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is 571-272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rosanne Kosson
Examiner, Art Unit 1652

rk/2007-08-31

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